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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER
BRAINARD, TIMOTHY A

ART UNIT	PAPER NUMBER
3662	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

PTOL-90A (Rev. 04/07)

	Application No.	Applicant(s)
Office Action Summary	10/574,632	HIPP, JOHANN
	Examiner	Art Unit	
	TIMOTHY A. BRAINARD	3662	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>14 October 2009</u>.

2a)☒ This action is **FINAL**.   2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>34,35,38-42,45 and 48-66</u> is/are pending in the application.

     4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) <u>34,35,38-42,45 and 48-66</u> is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on <u>05 April 2006</u> is/are: a)☒ accepted or b)☐ objected to by the Examiner.

     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

     a)☒ All   b)☐ Some *   c)☐ None of:

         1.☒ Certified copies of the priority documents have been received.

         2.☐ Certified copies of the priority documents have been received in Application No. _____.

         3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

     * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO/SB/08)
     Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
     Paper No(s)/Mail Date. _____.

5)☐ Notice of Informal Patent Application

6)☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 112

1.   The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly
> claiming the subject matter which the applicant regards as his invention. \

2.   Claims 40, 41, and 59 are rejected under 35 U.S.C. 112, second paragraph, as

being indefinite for failing to particularly point out and distinctly claim the subject matter

which applicant regards as the invention.

3.   Regarding claims 40, 41, 59, the phrase "preferably" renders the claim indefinite

because it is unclear whether the limitation(s) following the phrase are part of the

claimed invention. See MPEP § 2173.05(d).

4.   ***Claim Rejections - 35 USC § 103***

5.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
> the prior art are such that the subject matter as a whole would have been obvious at the time the
> invention was made to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was made.

6.   Claims *34, 35, 38-42, 45 and 48-66* are rejected under 35 U.S.C. 103 (a) as

being unpatentable over **Lai** et al (US 2003/0035097) in view of **Ogawa** and **Lewis** et al

(US 2004/0075823). **Lai** teaches (claim 33 55, 63, 64, 65) a method of distance

measurement comprising transmitting pulsed electromagnetic radiation using one

transmitter, detecting reflected signal pulses using one receiver, measuring distances

from objects at which the transmitted radiation pulses are reflected by determining a

pulse propagation time, measuring noise using the receiver with specific points in time

being determined at which at least one threshold of the receiver lying in the noise is

passed through and with changes in noise caused by the signal pulses being detected

by adding a plurality of individual measurements respectively including specific points in

time (para 19-23), (claim 34) an individual measurement is generated for each

transmitted pulse (para 28-32), (claim 64, 65, 56, and 66) a sequence of logical pulses

is generated by means of the threshold of the receiver lying in the noise from the analog

received signal containing the noise pulses and/or noise pulses changed by the signal

pulses with the individual measurement being derived from the sequence (para 23),

(claim 65 and 66) the flanks of the logical are used as points in time of the individual

measurement (para 23), (claim 38) the individual measurements are introduced into at

least one memory (para 23), (claim 39 and 61) the points in time of the individual

measurement are first intermediately stored in a memory, in particular in a memory of

an IC component, and are subsequently transferred to a further memory, in particular to

a time pattern memory, with the points in time being stored in the further memory in an

arrangement taking their respective time information into account (para 28-32), (claim

40 and 62) the averaging of the individual measurements is carried out in at least one

time pattern memory, with the same time pattern memory preferably being used for all

individual measurements to be averaged and with the corresponding memory cell of the

time pattern memory being increased by a value n in the case of a rising pulse flank and

being reduced by the value n in the case of a falling flank, or vice versa, with the value 1

preferably being used for n (para 31-33), (claim 41) a time pattern is used in the

averaging of the individual measurements in which the measurement time is divided into

a plurality of sequential time windows, with one memory cell of at least one time pattern

memory (fig 4 and 5), (claim 42) the number of passing through of the threshold of the

receiver is counted (para 28-32), (claim 58, 59, 65, and 66) a distinction is made in the

averaging between points in time at which the threshold of the receiver is exceeded and

points in time at which the threshold of the receiver is fallen below, with preferably a

point in time of an exceeding being evaluated as positive and a point in time of a falling

below being evaluated negatively, or vice versa (para 28-32 and fig 4 and 5), (claim 65

and 66) the average value is integrated into an amplitude function subsequent to the

averaging of the individual measurements (fig 5), (claim 45) the bandwidth of the

amplitude function is reduced in that averaging is preferably carried out in the amplitude

function in each case over a predetermined number of sequential time windows (fig 5

and para 32), (claim 65 and 66) a detection threshold is applied to the amplitude

function for the detection of the changes in the noise cause by the signal pulse (para

19-23), (claim 50) the amplitude function for the determination of nadirs of the signal

pulses, in each case in the region of the rising flank and/or falling flank of the signal

pulse, an extrapolation of the noise is carried out, a noise function obtained in this

process is deducted from the amplitude function and the point of intersection of the

interpolated pulse flank with the average value of the noise is determined as the nadir,

with the object distances being determined on the basis of the nadirs, (claim 51) a

shape of the signal pulses is evaluated in the amplitude function, (claim 52) the

averaging of the individual measurements takes place packet-wise in that a summing is

carried out sequentially in each case via a number of single individual measurements

and a division is made by the number of individual measurements for the formation of

packet average values, (claim 53) the object distances are determined from a single

packet average value, (claim 54) averaging is carried out over a plurality of packets and

the object distances are determined from the average value hereby formed (fig 4 and 5

and para 28-32), (claim 57) a clock for the emission of cycle pulses of a known width

with a known frequency and a counter with which the cycle pulses emitted during a time

period are provided for the determination of time periods which respectively pass from

the transmission of a radiation pulse up to a point in time corresponding to a flank of a

logical pulse (fig 5 and para 28-32) (claim 63) a sequence of logical pulses (23) is

generated by means of the threshold (21) of the receiver (17) lying in the noise from the

analog received signal (37) containing the noise pulses and/or noise pulses changed by

the signal pulses (15), with the individual measurement being derived from this

sequence (fig 2 and para 21). **Lai** does not teach using only points in time when the

noise is passed through the threshold, the flanks of logical pulse are used as points in

time of the individual measurement, a distinction is made in the averaging between

points in time at which the threshold of the receiver is exceeded and points in time at

which the threshold of the receiver is fallen below, the respective associated object

distance is determined in the amplitude function for the signal on the basis of at least

one point in time at which the detection threshold is passed through generating and

averaging of the individual measurements and the detection of the changes in the noise

take place by means of a software-aided evaluation. **Ogawa** teaches using only points

in time when the noise is passed through the threshold, the flanks of logical pulse are

used as points in time of the individual measurement, a distinction is made in the

averaging between points in time at which the threshold of the receiver is exceeded and

points in time at which the threshold of the receiver is fallen below (fig 8 and para 50). It

would have been obvious to modify **Lai** to include using only points in time when the

noise is passed through the threshold, the flanks of logical pulse are used as points in

time of the individual measurement, a distinction is made in the averaging between

points in time at which the threshold of the receiver is exceeded and points in time at

which the threshold of the receiver is fallen below because it is one of multiple design

choices with no new or unexpected results. **Lewis** teaches generating and averaging of

the individual measurements and the detection of the changes in the noise take place

by means of a software-aided evaluation (para 18) (claim 65 and 66) the respective

associated object distance is determined in the amplitude function for the signal on the

basis of at least one point in time at which the detection threshold is passed through (fig

20 and col 20, lines 14-47). It would have been obvious to modify **Lai** in view of **Ogawa**

to include generating and averaging of the individual measurements and the detection

of the changes in the noise take place by means of a software-aided evaluation and the

respective associated object distance is determined in the amplitude function for the

signal on the basis of at least one point in time at which the detection threshold is

passed through because it is one of multiple methods to perform the operation with no

new or unexpected results. While **Lai** in view of **Ogawa** and **Lewis** does not teach

averaging a plurality of individual measurements of the noise at specific points it would

have been obvious to divide the number of counts bit the number of measurements

taken because it is one of multiple methods to determine where the timing of the reflection with no new or unexpected results. With respect to claims 48-49, while **Lai** in view of **Ogawa** and **Lewis** does not teach the detection threshold is set in dependence on a factor by which the threshold of the receiver is reduced with respect to a value of 4.5 NEP and the detection threshold is calculated from a calculation specification containing the factor. It is expected that one skilled in the art would have set the threshold at 4.5 NEP because it is one of multiple tolerance to set the threshold with no new or unexpected result

Response to Arguments

7.   Applicant's arguments with respect to claim 65 and 66 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

8.   Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL.** See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later

than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to TIMOTHY A. BRAINARD whose telephone number is

(571)272-2132. The examiner can normally be reached on Monday - Friday 8:00 - 5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Thomas Tarcza can be reached on (571) 272-6979. The fax phone number

for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the

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published applications may be obtained from either Private PAIR or Public PAIR.

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Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a

USPTO Customer Service Representative or access to the automated information

system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

TAB

/Thomas H. Tarcza/
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